

REMARKS/ARGUMENTS

Claims 1 – 11 have also been rejected under 35 U.S.C. § 103(a) as being obvious in view of U.S. Patent No. 4,818,481 to Luton et al. Luton describes a cryomilled aluminum alloy that is dispersion strengthened by the addition of refractory materials. In particular, Luton specifically teaches cryomilling the aluminum alloy in the presence of liquid nitrogen and oxygen to form oxy-nitride particles in the alloy. At column 6, lines 19-21, Luton further states that suitable refractory compounds “include oxy-nitrides, oxides, carbides, nitrides, borides, and carbo-nitrides, and the like.” Luton also states that “when one or more other refractory compounds are present, the total volume of refractory material will be ... 0.5 to 25%, preferably from 0.5 to 10%, and more preferably 0.5 to 5%....” See column 6, lines 43 – 47.

Contrary to the teachings of Luton, the claimed invention is based on the discovery that the inclusion of refractory materials, such as oxy-nitrides, carbides, nitrides, borides, and carbo-nitrides are undesirable in the aluminum alloy. Independent Claims 1 and 11 have been amended to recite that the alloy includes less than 0.5 vol% of refractory materials, and that the refractory materials comprise oxy-nitrides in combination with at least one of oxides, borides, carbides, or carbo-nitrides. Support for this amendment is found in the specification, for example, at paragraph 0016.

Luton does not teach an alloy having less than 0.5 vol% of refractory materials, wherein the refractory materials comprise oxy-nitrides in combination with at least one of oxides, borides, carbides, or carbo-nitrides. Rather, Luton teaches that when one or more refractory materials are present in combination with oxy-nitrides, the total amount of refractory materials is between 0.5 to 5 vol.%. Thus, Luton fails to disclose independent Claims 1 or 11. Further, Luton provides no teachings that would motivate one of ordinary skill in the art to modify the alloy of Luton to have a combination of oxy-nitrides and one or more additional refractory materials that are present in the recited amount. Quite to the contrary, one of ordinary skill in the art would be motivated to produce an alloy wherein the amount of oxy-nitrides in combination with one or more additional refractory materials is greater than 0.5vol.% because Luton specifically teaches that the inclusion of the refractory materials produces an alloy having

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improved strength. As noted above, Luton specifically states that "when one or more other refractory compounds are present, the total volume of refractory material will be ... 0.5 to 25%, preferably from 0.5 to 10%, and more preferably 0.5 to 5%...." Thus, it can be clearly seen that Luton teaches a refractory material content that is outside the claimed range. Accordingly, Claims 1 and 11 and any claims dependent thereon are not disclosed or suggested by the cited referene.

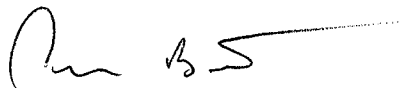
In view of the foregoing amendments and remarks, it is respectfully submitted that the pending rejections under 35 U.S.C. § 103 have been overcome.

Conclusion

It is respectfully submitted that all pending Claims 1-11 are in condition for immediate allowance and an early notification of the allowability of these claims is earnestly solicited. If any matters remain to be resolved, the Examiner is urged to contact the undersigned attorney by telephone at 704-444-1185 to expedite prosecution of this application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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